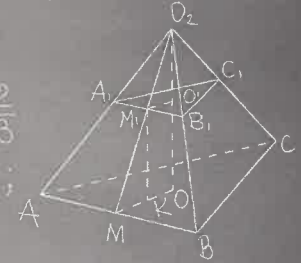


ACTUARIAL SCIENCE



ACTUARIAL SCIENCE AS AN UNDERGRADUATE MAJOR

Actuarial science is a discipline in which complex data sets are used to analyze risk probabilities and their associated costs. Corporations rely on actuarial risk evaluation to frame their strategic management decisions. Actuaries are employed by the insurance industry, corporations, the government and/or individuals. To become an actuary, a strong background in mathematics, statistics, economics and finance is required. Therefore, the College of Arts and Sciences' Department of Mathematics jointly offers this program with the Department of Economics in the School of Business Administration. The student also is required to complete a series of exams set by the Society of Actuaries and Casualty Actuarial Society. This major provides preparation for an advanced degree in economics, mathematics, statistics or business administration, and instills in students strong critical-thinking capabilities.

MAJOR REQUIREMENTS

To fulfill the requirements for the major in actuarial science, students must complete a minimum of 124 credits, as specified below. All required and cognate courses must be completed with a grade of 2.0 or better in each major course.

REQUIRED COURSES

(3-4 credits each)

MTH 154/1554	Calculus I
MTH 155/1555	Calculus II
MTH 254/2554	Multivariable Calculus
MTH 275/2775	Linear Algebra
ACS 300/3000	Foundations of Probability & Calculus
STA 226/2226	Applied Probability & Statistics
STA 427/4227	Intro. to Mathematical Statistics
ECN 201/2010	Microeconomics and
ECN 202/2020	Global Macroeconomics or ECN 210/2100 Principles of Economics (Combines ECN 201/2010 & 202/2020)
ECN 302/3020	Intermediate Macroeconomics OR ECN 321/4200 Financial Markets & the Economy
ECN 303/3030	Managerial Economics
QMM 241/2410	Statistical Methods for Business II
FIN 322/3220	Managerial Finance I
FIN 416/3600	Investment Analysis OR FIN 425/4250 Financial Derivatives
FIN 422/3720	Managerial Finance II
ECN 405/4050	Econometrics OR STA 402/4002 Applied Linear Models

ACS 450/4550	Financial Mathematics
MIS 314/3140	Business Database Systems
MIS 443/4460	Business Analytics OR MIS 545 Business Analytics
SBC 199/1990	ACHIEVE I
SBC 299/2990	ACHIEVE II
ACS 399/3987	ACHIEVE Actuarial Science

ELECTIVES - CHOOSE ONE

(4 credits each):

APM 255/2555	Intro to Differential Equations with Matrix Algebra
APM 433/4333	Numerical Methods
APM 434/4334	Applied Numerical Methods: Matrix Methods
STA 425/4225	Elements of Stochastic Processes
STA 428/4228	Intro to Mathematical Statistics II

COGNATES

(3-4 credits each):

ACC 200/2000	Intro to Financial Accounting
ACC 301/3010	Financial Reporting and Analysis
EGR 141/1400	Computer Problem Solving in Engineering and Computer Science
WRT 382/3082	Business Writing

Oakland University is changing to four-digit course codes beginning Fall 2017.

College of Arts and Sciences | Department of Mathematics | 368 Math and Science Center
 Chief Faculty Adviser | Darrell Schmidt | schmidt@oakland.edu | (248) 370-3443

School of Business Administration | Department of Economics | 440 Elliot Hall
 Director | Ronald Tracy | tracy@oakland.edu | (248) 370-3514

SKILLS AND ABILITIES

Students are taught to think analytically and to develop models appropriate to the process being analyzed. Students develop many useful skills including the ability to:

- Understand concrete and abstract concepts
- Think logically and critically
- Identify the essence of a problem
- Gather/organize/evaluate data
- Solve quantitative problems
- Manage complex projects
- Work independently and as part of a team
- Apply fundamental business principles
- Communicate by preparing and presenting facts and ideas clearly, effectively and by listening
- Make sound judgments and decisions
- Use computers (spreadsheets, statistical programs, databases, and programming)

CAREER OPPORTUNITES

Actuaries work anywhere risk is present. Actuaries are employed by colleges and universities, banks and investment firms, public accounting firms, labor unions, rating bureaus and fraternal organizations. Since actuarial judgment is highly valued, career paths often lead to upper management and executive positions. Many resources, including the Jobs Related Almanac, have consistently rated the actuarial profession as a top-ranked career based upon factors including physical demands, job security, compensation, advancement, and stress, among other criteria.

For more information on careers please visit the Bureau of Labor Statistics at bls.gov/OCO or O*Net at onetonline.org.

Career Choices:

- Actuary
- Insurance Underwriter
- Cost Estimator
- Budget Analyst
- Statistician
- Economist
- Personal Financial Advisor

Organizations that commonly employ actuarial science majors

- Ally Financial
- Blue Cross Blue Shield of Michigan
- Deloitte
- Towers Watson
- WellPoint

JOB OPENINGS

Access thousands of job and internship postings at Handshake (oakland.edu/careerservices/handshake). Handshake also provides the latest news from OU Career Services, exclusively for OU students and alumni.

ACTUARIAL SCIENCE ORGANIZATIONS AT OU

SAS (Society of Actuarial Sciences)

For more information visit: oakland.edu/business/orgs.

PROFESSIONAL ORGANIZATIONS

The Society of Actuaries (soa.org)

The Casualty Actuarial Society (casact.org)

CAREER OUTLOOK

Starting Salary | \$35,050 - \$55,540

Mid-Career Salary | \$57,110 - \$91,970

National Growth | 5 - 18% by 2024

Data from the National Bureau of Labor and Statistics

**The average salaries reported are an average of all actuaries upon entering the job market, or at mid-career. This includes actuaries who have not passed any exams and those that have achieved the status of a Fellow. In general, passing two exams will raise your starting salary and passing four exams will raise your mid-career salary above the averages reported.*

FOR FURTHER INFORMATION

To help choose your area of interest, plan your future career goals, and monitor your progress, you can visit the Oakland b-school's Undergraduate Advising and Career Services Offices.

School of Business Administration Undergraduate Advising

Elliott Hall, Room 232
275 Varner Drive
(248) 370-3285
oakland.edu/business/advising

College of Arts and Sciences Advising

Varner Hall, Room 221
371 Varner Drive
(248) 370-4567
oakland.edu/casadvising

B-School Career Services

Elliott Hall, Room 232
275 Varner Drive
(248) 370-3215
oakland.edu/business

Career Services

Main Office
North Foundation Hall, Room 154
318 Meadow Brook Road
(248) 370-3250
oakland.edu/careerservices

Also consult: oakland.edu/math/major and beanactuary.org